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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/747,370	12/21/2000	William J. LaBarge	DP-303157	8629

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DELPHI TECHNOLOGIES, INC.
M/C 480-410-202
PO BOX 5052
TROY, MI 48007

EXAMINER	
DUONG, THANH P	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/747,370	LABARGE ET AL.	
	Examiner	Art Unit	
	Tom P. Duong	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's remarks and amendments filed on July 17, 2006 have been carefully considered. Claims 15 and 20 have been amended. Claims 15-24 are pending in this application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 20, 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 11-090226.

With respect to claims 20, 22-24, JP 11-090226 discloses a catalytic converter comprising:

a catalyst substrate material comprising cordierite, a zirconium phosphate layer disposed on said substrate; a catalyst layer disposed on said zirconium phosphate (see, for example, Fig. 1, translation pages 15-16, 23-29).

With respect to claim 22, JP 11-090226 discloses that said zirconium phosphate layer is disposed on said catalyst substrate material and a catalyst material layer containing platinum, palladium, rhodium, etc. is disposed on said zirconium phosphate layer (see, for example, translation pages 23-24).

With respect to claims 23-24, JP 11-090226 discloses that said zirconium phosphate layer has a thickness of up to about 4 or 10 nanometers ((see, for example, Fig. 1, translation page 16).

With respect to cordierite having a surface that includes microcracks, JP 11-090226 discloses the zirconium phosphate with at least 5 Angstrom (0.0005 micrometers) pore size and thereby, zirconium phosphate of JP '226 inherently fills the microcracks of the substrate.

Instant claims 20, 22-24 structurally read on the apparatus of JP 11-090226.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 20, 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-090226 in view of Beauseigneur et al. (5,346,722).

With respect to claims 20, 22-24, JP 11-090226 discloses a catalytic converter comprising:

a catalyst substrate material comprising cordierite, a zirconium phosphate layer disposed on said substrate; a catalyst layer disposed on said zirconium phosphate (see, for example, Fig. 1, translation pages 15-16, 23-29).

With respect to claim 22, JP 11-090226 discloses that said zirconium phosphate layer is disposed on said catalyst substrate material and a catalyst material layer containing platinum, palladium, rhodium, etc. is disposed on said zirconium phosphate layer (see, for example, translation pages 23-24).

With respect to claims 23-24, JP 11-090226 discloses that said zirconium phosphate layer has a thickness of up to about 4 or 10 nanometers ((see, for example, Fig. 1, translation page 16).

With respect to cordierite having a surface that includes microcracks, JP 11-090226 discloses the zirconium phosphate with at least 5 Angstrom (0.0005 micrometers) pore size and thereby, zirconium phosphate of JP '226 inherently fills the microcracks of the substrate. For purpose of argument, Beauseigneur et al. '722 makes it clear that the substrate (Col. 3, lines 5-33) with microcracks which are defined as fine cracks of equal to or less than about 0.5 micrometers in width. Therefore, in view of Beauseigneur et al. '722, it is inherent and/or obvious to one having ordinary skill in the art that the zirconium phosphate of JP '226 fills the microcracks of the surface.

Furthermore, Applicant has not defined the gap size or diameter of the microcracks of the claimed invention; therefore, in view of Beaquseigneur, it is inherent and/or obvious to one having ordinary skill in the art that the zirconium phosphate of JP 11-090226 fills the microcracks of the surface.

6. Claims 15, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-090226 in view of Beauseigneur et al. (5,346,722), Swaroop et al (5,447,694), Cyron et al (5,116,681), and Deeba et al (6,375,910).

With respect to claims 15, 17-19, JP 11-090226 discloses a catalytic converter comprising:

a catalyst substrate material comprising cordierite, a zirconium phosphate layer disposed on said substrate; a catalyst layer disposed on said zirconium phosphate (see, for example, Fig. 1, translation pages 15-16, 23-29).

With respect to claim 22, JP 11-090226 discloses that said zirconium phosphate layer is disposed on said catalyst substrate material and a catalyst material layer containing platinum, palladium, rhodium, etc. is disposed on said zirconium phosphate layer (see, for example, translation pages 23-24).

With respect to claims 23-24, JP 11-090226 discloses that said zirconium phosphate layer has a thickness of up to about 4 or 10 nanometers ((see, for example, Fig. 1, translation page 16).

With respect to cordierite having a surface that includes microcracks,

JP 11-090226 discloses the zirconium phosphate with at least 5 Angstrom (0.0005 micrometers) pore size and thereby, zirconium phosphate inherently filled the microcracks of the substrate. For purpose of argument, Beauseigneur et al. '722 makes it clear that the substrate (Col. 3, lines 5-33) with microcracks which are defined as fine cracks of equal to or less than about 0.5 micrometers in width. Therefore, in view of Beauseigneur et al. '722, it is inherent and/or obvious to one having ordinary skill in the art that the zirconium phosphate of JP '226 fills the microcracks of the surface. Furthermore, applicant's has not defined the gap size or diameter of the microcracks of the claimed invention; therefore, in view of Beaquseigneur, it is inherent and/or obvious to one having ordinary skill in the art that the zirconium phosphate of JP '226 fills the microcracks of the surface.

The apparatus of JP 11-090226 is substantially the same as that of the instant claims as described in paragraph 5, but is silent as to whether the shell may be disposed around the substrate.

However, Fig. 1 of JP 11-090226 apparently shows a shell around the substrate.

In any event, Swaroop et al, Cyron et al and Deeba et al (see, for example, col. 18, lines 18-20) disclose the conventionality of providing the shell around the substrate.

It would have been obvious to one having ordinary skill in the art to provide a shell around the substrate as taught by Swaroop et al and Cyron et al in the apparatus of JP 11-090226, if not inherent therein, for covering the catalyst substrate thereof.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-090226 in view of view of Beauseigneur et al. (5,346,722), Swaroop et al (5,447,694), Cyron et al (5,116,681) and Deeba et al (6,375,910) as applied to claims 15, 17-19 above and further in view of Deeba et al (6,375,910) and Hampton (5,950,423).

Deeba et al discloses that the cordierite carrier may contain components, such as zirconium (see, for example, col. 7, lines 5-7; col. 8, lines 53-57).

Hampton further discloses that the carrier may contain components suitable for high temperature, such as cordierite, zirconium, etc. and mixture thereof (see, for example, col. 5, lines 57-67).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to select an appropriate material for the refractory carrier, such as zirconia, as taught by Deeba et al and Hampton in the apparatus of JP 11-090226, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-090226 in view of Beauseigneur et al. (5,346,722) and Deeba et al (6,375,910) and Hampton (5,950,423).

The same teachings with respect to Deeba et al and Hampton apply.

Response to Arguments

Applicant's arguments filed July 17, 2006 have been fully considered but they are not persuasive. (1) Applicant argued the zirconium phosphate material of JP '226 does not fill the microcracks of the substrate. Examiner respectfully disagrees. As described in the paragraphs 2 and 3, JP '226 discloses the zirconium phosphate with particle size of 5 Angstrom which is equivalent to 0.0005 micrometer. Therefore, it is inherent to one having ordinary skill in the art that the zirconium phosphate of JP '226 fills in the microcracks of the substrate. Furthermore, applicant has not defined the gap size or diameter of the microcracks of the claimed invention; therefore, in view of Beauseigneur, it is inherent and/or obvious to one having ordinary skill in the art that the zirconium phosphate of JP 11-090226 fills the microcracks of the surface.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P. Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tom Duong
October 24, 2006
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